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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,947	10/06/2003	Sashi Lazar	9746-95U1	3596

570 7590 09/13/2007
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EXAMINER	
MILLS, DONALD L	

ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
09/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/679,947	LAZAR ET AL.	
	Examiner	Art Unit	
	Donald L. Mills	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 October 2003*.
2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-42* is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-42* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a)☐ All b)☐ Some * c)☐ None of:
1.☐ Certified copies of the priority documents have been received.
2.☐ Certified copies of the priority documents have been received in Application No. _____.
3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date *See Continuation Sheet*.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :02/16/2007; 05/03/2007; 08/17/2005.

DETAILED ACTION

Claim Objections

1. Claims 26-42 are objected to because of the following informalities: the claims improper depend from canceled claims

Further regarding claim 33, the claim specifies *each upstream communication,* which should be corrected to "the upstream communication." Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 25-30 and 32-39 are rejected under 35 U.S.C. 102(e) as being anticipated by Logvinov et al. (US 2004/0160990 A1), hereinafter referred to as Logvinov.

Regarding claim 25, Logvinov discloses a method and system for timing controlled signal transmission in a point to multipoint power line communication system, which comprises:

A first head-end unit connected at a distant end to the power line grid (Referring to Figure 1, head-end **12** connected to power line **16**;) and

One or more first hybrid units connected to the power line grid at a customer premises, said one or more hybrid units including (Referring to Figure 1, remote **14A-N** connected to power line **16**,):

A first client-end unit adapted to communicating with the first head end unit (Referring to Figure 1, remote **14A** communicates with head-end **12**,) and

A second head-end unit adapted to communicating with the first client-end unit and with one or more second client-end units (Referring to Figure 1, remote **14N** in communication with **14A** and multiple transceivers, which are not illustrated. See Paragraph 0023.)

Regarding claim 26, Logvinov discloses *wherein one or more of the second client-end units also includes a third head-end unit, each third head-end unit being adapted to communicate with the one or more second client-end unit and one or more third client-end units* (Referring to Figure 1, (Referring to Figure 1, remote **14N** in communication with **14A** and multiple transceivers which are not illustrated. See Paragraph 0023.)

Regarding claim 27, Logvinov discloses *a logical half-duplex downstream communication channel, whereby a carrier frequency of the head-end unit's transmitter output is matched by the receive frequency of each of the client-end units associated with the head-end unit, and a logical half-duplex upstream communication channel, in which a carrier frequency of each of the client-end units' transmitter output is matched with the receive frequency of the head-end unit, the upstream and downstream channels associated with the head- end unit and the associated client-end units forming a sub-network* (Referring to Figure 1, the TDM frame is used in conjunction with a frequency division multiploxod (FDM). In the FDM PLC systems where

PLC signal transmission to a PLC remote or head-end overlaps in time with another transmission to a PLC remote or head-end, PLC signal transmission are separated from one another in the frequency domain for the upstream and downstream channels. See paragraphs 0032 and 0033.)

Regarding claim 28, Logvinov discloses *wherein the carrier frequencies of each of the downstream and upstream channels operating on the wide area power line network are mutually exclusive* (Referring to Figure 1, the TDM frame is used in conjunction with a frequency division multiploxod (FDM). In the FDM PLC systems where PLC signal transmission to a PLC remote or head-end overlaps in time with another transmission to a PLC remote or head-end, PLC signal transmission are separated from one another in the frequency domain for the upstream and downstream channels, resulting in mutually exclusive channels. See paragraphs 0032 and 0033.)

Regarding claim 29, Logvinov discloses *wherein the system comprises a plurality of subnets, the frequency bands of the upstream and the downstream channels of the plurality of sub-networks being mutually exclusive* (Referring to Figure 1, the TDM frame is used in conjunction with a frequency division multiploxod (FDM). In the FDM PLC systems where PLC signal transmission to a PLC remote or head-end overlaps in time with another transmission to a PLC remote or head-end, PLC signal transmission are separated from one another in the frequency domain for the upstream and downstream channels, resulting in mutually exclusive channels from the different transceivers **14** (sub-networks). See paragraphs 0032 and 0033.)

Regarding claim 30, Logvinov discloses *wherein the bandwidth of the downstream communication channel is substantially identical to the bandwidth of the upstream communication channel* (Referring to Figure 1, as indicated on the Table on page 6, the upstream and downstream bandwidths are substantially identical. See paragraph 0050.)

Regarding claim 32, Logvinov discloses *wherein each client-end unit examines the destination address of the data frame received from the head-unit, and (1) if the destination hardware address matches with its own hardware address, the frame is scheduled for processing, and (2) if the hardware address of the client-end unit is not found, the frame is discarded* (Referring to Figure 1, the head-end is the source of distribution point for the bulk of the data communicated in the point to multipoint PLC network, the transceivers detect data packets resolve their corresponding destination address and either process or ignore the frame depending on its relevancy. See paragraphs 0012 and 0013.)

Regarding claim 33, Logvinov discloses *wherein each upstream communication channel is divided into one or more time slots* (Referring to Figure 1, the upstream comprises a number of time slots. See paragraph 0029.)

Regarding claim 34, Logvinov discloses *wherein time slot resources in a head-end are allocated to the associated client-end units by a subscription based allocation scheme, wherein any unallocated resources are temporarily allocated to the associated client-end units with the constraints that the unallocated resources may be revoked at any time, without notice by the head-end unit* (Referring to Figure 1, assignment of the time slots is adjustable to permit the assignment of multiple time slots to one remote to increase the data transfer rate for that remote. The slot assignments are dynamically adjustable to satisfy quality of communications service. See paragraph 0031.)

Regarding claim 35, Logvinov discloses *wherein every associated client-end device receives an equal share of the time slot resources* (Referring to Figure 2, each remote **14** is assigned one time slot **205** in the receive segment **202**. See paragraph 0029.)

Regarding claims 36 and 40, Logvinov discloses *wherein the time slot resources are dynamically reassigned when a new client-end unit is inserted into the network or a client-end unit which has been assigned time slot resources is deactivated* (Referring to Figure 1, assignment of the time slots is adjustable to permit the assignment of multiple time slots to one remote to increase the data transfer rate for that remote. The slot assignments are dynamically adjustable to satisfy quality of communications service. Which is based upon the exchange of synchronization information exchanged between the head-end and transceivers in accordance with the Home Plug Alliance PLC system. See paragraphs 0025-0027, 0031, and 37.)

Regarding claim 37, Logvinov discloses *a medium access control sub-system within each head-end unit, the medium access control sub-system periodically broadcasting a time slot allocation signal in a predetermined one of the time slots, wherein if an individual one of the client-end unit detects the time slot allocation signal having an address of the individual client-end unit, the individual client-end unit may transmit in an allocated time slot, and if the individual one of the client-end units does not detect the allocated time slot signal with the address of the individual client-end unit, the individual client-end unit may not transmit in the allocated time slot* (Referring to Figure 1, assignment of the time slots is adjustable to permit the assignment of multiple time slots to one remote to increase the data transfer rate for that remote. The slot assignments are dynamically adjustable to satisfy quality of communications service. See paragraph 0031.)

Regarding claim 38, Logvinov discloses *medium access control sub-system within each head-end unit, the medium access control sub-system periodically providing a registration time slot adapted for receiving registration signals from the client-end units, wherein upon receipt of* *a registration signal from an individual one of the client-end units, the medium access control subsystem allocates a time slot to the individual client end-unit by including the address of the individual client-end unit in the next broadcasted time slot allocation signal* (Referring to Figure 1, assignment of the time slots is adjustable to permit the assignment of multiple time slots to one remote to increase the data transfer rate for that remote. The slot assignments are dynamically adjustable to satisfy quality of communications service. See paragraph 0031.)

Regarding claim 39, Logvinov discloses *wherein the head-end unit broadcasts identical downstream data to all client-end units on the same logical sub-network* (Referring to Figure 1, the head-end is the source of distribution point for the bulk of the data communicated in the point to multipoint PLC network, the transceivers detect data packets resolve their corresponding destination address based upon the packet which has been transmitted in a point-to-multipoint fashion. See paragraphs 0012, 0013, and 0026.)

Regarding claim 41, Logvinov discloses *examining each upstream time slot to determine if the transmission contains valid data; incrementing a missing slot counter if the time slot does not contain valid data; marking the client-end unit "down" if a maximum count in the missing slot counter is exceeded, removing the client-end unit's resource allocation record from a time slot allocation table broadcast by the head-end unit 1; and allocating, if possible, the previously allocated time slots to other client-end units* (Referring to Figure 1, assignment of the time slots is adjustable to permit the assignment of multiple time slots to one remote to increase the data transfer rate for that remote. The slot assignments are dynamically adjustable to satisfy quality of communications service to accommodate Quality of Service requirements. Which is based upon the exchange of synchronization information exchanged between the head-end and transceivers in accordance with the Home Plug Alliance PLC system. The system of Logvinov must track the utilization of respective time slots otherwise the dynamic reassignment of such time slots would not be possible. The Examiner interprets the relinquishing of dynamically adjusted time slots to other transceivers requesting increased bandwidth as the allocation of the previously allocated time slots to other client end units. See paragraphs 0025-0027, 0031, and 37.)

Regarding claim 42, Logvinov discloses *detecting a supervisory packet transmitted from a head-end unit; searching the supervisory packet for an address of the client-end unit; storing a slot allocation in the client-end unit if the address of the client end unit is found in the supervisory packet; and ceasing transmission if the client-end unit fails to find its address after detecting a predetermined number of supervisory packets* (Referring to Figure 1, assignment of the time slots is adjustable to permit the assignment of multiple time slots to one remote to increase the data transfer rate for that remote. The slot assignments are dynamically adjustable to satisfy quality of communications service to accommodate Quality of Service requirements. Which is based upon the exchange of synchronization information exchanged between the head-end and transceivers in accordance with the Home Plug Alliance PLC system. The system of Logvinov would not permit unassigned transceivers from transmitting if they are not assigned a particular time slot. See paragraphs 0025-0027, 0031, and 37.)

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Logvinov (US 2004/0160990 A1) in view of Miller et al. (US 2005/0172199 A1), hereinafter referred to as Miller.

Regarding claim 31 as explained in the rejection statement of claim 25, Logvinov discloses all of the claim limitations of claim 25 (parent claim).

Logvinov does not disclose *a flag field including a destination address, a length field, which identifies the number of octets in the payload of the frame, a media selector field, which identifies the type of payload, a cyclic redundancy check (CRC) field, which contains the CRC value calculated over a remaining portion of the frame, and a payload field including an arbitrary sequence of data.*

Miller teaches a reliable method and system for efficiently transporting dynamic data across a network, which comprises a destination number **210** (destination address), segment length **203** (length field), media access field **200** (media selector field), CRC **302** (a cyclic redundancy check field), and a payload **301** (payload field) (Referring to Figures 2 and 3, see paragraph 0093 and 0094.)

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement the framing format of Miller in the system of Logvinov. One of ordinary skill in the art at the time of the invention would have been motivated to do so in order to efficient and reliable frame format for data transmission as taught by Miller (See paragraph 0004.)

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald L. Mills whose telephone number is 571-272-3094. The examiner can normally be reached on 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Donald L Mills/

September 3, 2007

CHI PHAM
SUPERVISORY PATENT EXAMINER
9/11/07